

Summary of Workshop
The Future of Nonproliferation in a Changed and Changing Security Environment
By William Tobey

Held at Lawrence Livermore National Laboratory
Livermore, California
July 14-15, 2016

Introduction

In July 2016, Lawrence Livermore National Laboratory's (LLNL) Global Security Principal Directorate gathered more than two dozen academics and practitioners in the fields of nonproliferation, cooperative threat reduction, arms control, and countering nuclear terrorism to review the current state of these policies, assess where future progress might be possible, and suggest future Laboratory priorities.

With former LLNL Director Mike May, I was asked to summarize the discussion and to draw out important lessons to be learned from it, in both a final panel and this paper. The summary below is not a verbatim transcript, nor even a comprehensive rehearsal of the discussion. It is incomplete and subjective. Moreover, it draws on comments by many individual sometimes holding contradictory views. It highlights those points that seemed most important, although I did not necessarily agree with them. It also provides additional commentary, in italics; those thoughts are mine, and do not necessarily reflect the views of other participants or LLNL. A companion Workshop Summary report can be found at https://cgsr.llnl.gov/thrust/reduce_strategic_dangers

An analytic framework presented to the group asked them to consider a portfolio of Laboratory activities in these areas and whether each was a “buy,” “sell,” or “hold” in terms of the relative level of effort that should be exerted in the future—not whether any particular activity should be dropped altogether.

The Nonproliferation Regime 20 Years After NPT Extension

1. The gulf between Nonproliferation Treaty (NPT) Nuclear Weapons States and Non Nuclear Weapons States is larger than ever before and growing.
2. This gulf manifests itself in divergent perceptions of the principal problem and policy prescriptions, e.g. a focus on the humanitarian consequences of nuclear war and legally binding prohibitions on the possession of nuclear weapons by the Non Nuclear Weapons States, while Nuclear Weapons States remain concerned about proliferation, nuclear terrorism, deterrence, and stability.
3. The gulf will likely be worse in 2020 at the next review conference, as frustrations grow over lack of progress on arms control and a Middle East Weapons of Mass Destruction Free Zone.

4. Nonetheless, the nonproliferation regime has been a realm of great policy continuity over the past 20 years.

The nonproliferation portfolio is a “hold.” The threats to the regime are acute, but limited. North Korea is a serious and growing problem, the character of which will change dramatically should the DPRK acquire dozens of weapons as some now project. The Iranian problem is likely deferred, but not solved, with Tehran committed to deploying centrifuges with a capacity of 190,000 separative work unit when the central limitations of the Joint Comprehensive Plan of Action expire. Nonetheless, there does not appear to be a long line of countries attempting to acquire nuclear weapons.

An important area for further work will be how to rebuild bridges between the Nuclear and Non Nuclear Weapons States. This will require creativity, and an alternative substantive agenda to legal prohibition of nuclear weapons. Russia has simultaneously blocked any further bilateral arms control agreements and evaded responsibility for lack of progress on disarmament. While Non Nuclear Weapons States often argue that the central bargain of the NPT was a trade of disarmament for nonproliferation, an equally important deal was struck among Non Nuclear Weapons States not to engage in fruitless competitions that would ultimately damage their security and economic interests.

The Future of Arms Control

1. Arms control is in a pause created by Russian unwillingness to pursue further reductions, the chill in U.S.-Russian relations, and Russian violation of the INF Treaty.
2. There are many ideas for initiatives when the security environment permits an end to the current pause. These include:
 - New START extension (although this might also be possible even without an improvement in U.S.-Russian relations);
 - De-mating physics packages from non-strategic nuclear weapons;
 - A NATO policy limiting intentions for, or at least disclosing, SM-3 missile defense deployments;
 - Functionally-related observable differences for the Aegis ashore launcher, or Russian inspection of the system to verify the absence of offensive weapons, in the context of correction of Russia’s INF Treaty violation;
 - Binding disclosure of missile defense plans over a set period of time, e.g. 10 years.
3. The timing for New START extension is a key question.

The arms control portfolio is a sell, i.e. to be trimmed not abandoned, because there are limited opportunities for near-term progress in the current security environment, and the factors that created that environment are likely to grow worse before they improve. Russian violation of the INF Treaty is an insurmountable impediment to ratifying any further U.S.-Russian arms control agreements, with the possible exception of New START

extension. Extending the New START Treaty would be in U.S. security interests because it provides a degree of transparency and an indicator (but not a guarantee) of Russian willingness to avoid destabilizing deployments. When to extend the New START Treaty, set to expire in February 2021, is a difficult question. Any move by the Obama Administration would likely be seen in the Senate as an attempt to foreclose the options of the next President. On the other hand, if relations are growing worse, delay might make even simple extension of the New START Agreement more difficult. As Russian and then U.S. strategic modernization programs proceed, the perceived relative advantages of and leverage over New START extension will shift. The Russian advantage in non-strategic nuclear weapons—once thought by many to be of minimal significance because of a benign political environment—has gained salience, especially given Russia’s stated employment doctrine. The U.S. edge in non-deployed strategic weapons and the Russian advantage in weapons production capacity partially offset each other, although the asymmetry of strengths could diminish strategic stability. Finally, there may be a level of missile defense deployments large enough to deal with North Korean, Iranian, or accidental and unauthorized launches, as well as to create uncertainty in the mind of a would-be attacker about meeting military objectives, while small enough not to create incentives to strike first because defenses would prevail against a “ragged response.” All of these issues merit further research.

Threat Reduction Beyond CTR

1. Threat reduction is not distinct from arms control; it is a continuation. Weapons dismantlement and material security are necessary next steps to arms reductions.
2. There is a limit to what can be done in arms control in the future, if the close professional relationships created by cooperative threat reduction efforts are not re-developed. This is particularly true if there is an attempt to move beyond limits on delivery vehicles with counting rules to limits on actual numbers of nuclear weapons or fissile material.
3. The capabilities and relationships developed during U.S.-Russian cooperative threat agreements are atrophying.
4. Cooperative threat reduction efforts are often driven by unexpected opportunities, arising on relatively short notice, e.g. Syria, Libya, and the Bratislava Initiative. This requires flexible, adaptive organizations.

Cooperative threat reduction is a hold. U.S.-Russian cooperation inside Russia has ended at least temporarily, although efforts with third countries, e.g. research reactor conversions, continue. Moreover, unexpected opportunities may arise, in Russia and elsewhere. An important analytic priority would be how to maintain the professional cooperative threat reduction relationships in the meantime. Exchanges on best security practices, joint development of security technology, and cooperation with third countries can maintain those professional relationships, but it would also be useful to develop other ideas.

Counterproliferation: Steady as She Goes?

1. Counterproliferation is a growth industry.
2. New technologies pose a severe and accelerating challenge—especially when paired with changes in the political, security, and economic environments, including, a continuing information technology revolution, economic globalization, and an increasingly commercial locus for strategically important technologies.
3. These technologies include: additive manufacturing; small-scale, process-intensive chemical manufacturing; genome editing. Other, now unrealized technological threats are likely to emerge.
4. The locus of knowledge of these emerging technologies is increasingly in the private sector, and in many cases outside the United States.
5. The nature and severity of the technological challenge means there is no room for “stove-piping.”
6. Cross-functional teams, including the life sciences, will be vitally important.

Counterproliferation is a “buy.” While the number of countries now seeking to proliferate is not growing, the acute challenges posed by North Korea and Iran remain significant. Both are continuing to employ illicit technology acquisition networks. Moreover, the pace of proliferation-relevant technology development is brisk—and accelerating. Finally, these technologies pose not only a direct threat of proliferation, but could also damage capabilities to monitor and verify nonproliferation agreements. For example, Russia likely used a technology-based solution to defeat what were once thought to be tamper-proof containers for Olympic doping tests.

Countering Nuclear Terrorism

1. Nuclear terrorism is a persistent threat—and will remain so.
2. U.S. government efforts to counter the threat will likely receive declining resources, as the Obama Administration made it a very high priority.
3. To counter the nuclear terrorism threat successfully, requires a sustainable, systems-based approach, that does not mirror-image.
4. Several factors increase the risk of nuclear terrorism, including:
 - A growing target base of nuclear installations (e.g. power plants);

- Nuclear weapons modernization programs in several countries which require production and movement of weapons and materials, and sometimes lead to deployment of smaller, more mobile systems (e.g. in Pakistan);
 - Increased communications connectivity;
 - Ongoing and perhaps increasing regional instability.
5. The Intelligence Community faces difficult prioritization choices between daily, relatively low level threats, and rare or unprecedented catastrophic threats; too often the nuclear terrorism threat receives too little attention.
 6. The Islamic State or ISIS is different. It:
 - Is demonstrably capable of remote inspiration and recruitment;
 - Has greater access to territory, resources, and materials than any earlier terrorist organization (this might lead to an employment doctrine that more resembles that of a state, if defending the caliphate becomes a higher priority than advancing an apocalyptic vision).
 7. A “ring strategy” to defend against loose Russian nuclear weapons and material is necessary to compensate for the end of the U.S.-Russian cooperative threat reduction program.
 8. Z Division needs to be reconstituted to its past capabilities.

Countering nuclear terrorism is a “hold.” The nuclear terrorism threat has likely grown worse as the capabilities of the principal enemy—the Islamic State—are greater than other groups that have undertaken or contemplated such activities, such as al Qaeda, Aum Shinrikyo, or Chechen militants. At the same time, budgets for preventing it, such as international nuclear security cooperation programs have been cut sharply—even by the Obama Administration. A “ring strategy” is necessary, but not likely sufficient, as a full scope of compensatory measures will be necessary to fill the gap caused by the end of U.S.-Russian cooperative threat reduction programs in Russia, while official corruption, organized crime, and Islamic radicalism there appear to be endemic and perhaps increasing. The Islamic State’s ability to radicalize and recruit individuals remotely poses a new challenge to personnel reliability programs, and demands urgent analytic action to develop and implement novel means to counter it. No current or former policy maker, Republican or Democrat, that I know, thinks the cuts and mission realignment experienced by Z Division were constructive.